TESTIMONY OF

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BEFORE THE

HOUSE COMMITTEE ON HOMELAND SECURITY

SUBCOMMITTEE ON

PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK

"MITIGATING CATASTROPHIC EVENTS THROUGH EFFECTIVE MEDICAL RESPONSE"

OCTOBER 20, 2005

Chairman King and Members of the Committee; good afternoon and thank you for inviting me to speak before the committee. My name is Dr. Roy Alson. I am an Associate Professor of Emergency Medicine at Wake Forest University School of Medicine. I am very pleased to be here representing the American College of Emergency Physicians, the specialty of Emergency Medicine and the response personnel of the Disaster Medical Assistance Teams (DMATs) of the National Disaster Medical System (NDMS) which is part of FEMA. I currently serve as the Commander of DMAT NC-1 and have been active in the NDMS since NC-1 was formed from our local team Special Operations Response Team, in 1989. I have also previously served as the executive officer of the NMRT-E which is a chem-bio response team for the NDMS. I have had the privilege of leading the DMAT on numerous responses beginning with Hurricane Andrew and most recently with Hurricane Katrina.

Background

We have been extremely lucky in this country. We have yet to face, in recent memory, a truly catastrophic event, from a medical point of view. This is not to diminish events such as 9/11 or even Katrina and Rita. For those who suffered from these, they are catastrophes. Thousands died and hundreds more injured. But when compared to events such as the 2004 Tsunami or the recent Pakistani earthquake or the Tangshan earthquake of 1976 which killed 240,000 and left another 200,000+ injured in just one city, our recent major disasters have not generated the massive numbers of victims needing acute and long term medical care. Our events have taxed our medical systems because of the disruptions to infrastructure, but our response systems at the local, state and national level have met those needs. Was our response perfect? No, but it never will be. Can we do it better? Yes and many lessons have been learned and continue to be studied from both this year's storms, the 2004 season in Florida and Hurricane Allison in 2001.

The fact remains that it is only a matter of time until we face a truly catastrophic medical event in this nation. It may come in the form of a terrorist attack, using biological or radiological weapons; it may be a natural disaster such as a massive earthquake in the central US or Pacific Coast or it may be the threat now looming in front of us of a pandemic such as Avian Flu.

To deal with the medical consequences of a disaster, certain things are needed. Some are common to all events and some are specific and determined by the type of event. These needs are identified and categorized as the Emergency Support Functions (ESF's) as listed in the National Response Plan. ESF 8 is the Health and Medical Component of the Plan, but it does not stand alone, as appropriate shelter, and food and water all have significant impact upon the public health following a disaster.

In order to provide this medical care after a disaster there are certain absolute requirements:

- There must be facilities to give care. However during a disaster these sites may be damaged or destroyed, as we saw after Katrina and Allison, where flooding shut many hospitals. Much of day to day medical care is

provided in physician's offices and clinics. These too are often rendered inoperable after disasters.

- There must be personnel to provide the care. In the affected community, medical and response personnel can become victims themselves. They may not be able to reach the facilities that remain operational or they may have chosen to evacuate the area.
- There must be supplies and medications for the care givers to treat patients with. These may be destroyed by the event and after the event; it can take time to bring them in.
- The ability to move victims from the impact area to other non affected areas of the country, thus reducing the burden on the medical infrastructure also needs to be a consideration.

Consequently, at a time when a community has increased demands for medical care, the ability of that community to provide care is compromised by the event that created the demand. Complicating this picture is the nature of medical care in the US today. All of us practice in a highly competitive environment, with an emphasis on cost containment and "efficiency". As a result many medical facilities operate at near capacity and supply inventories are kept as low as practical, depending on "just in time delivery systems". Our ability to "surge" in response to disasters or epidemics is thus further hampered.

Furthermore, cooperation between hospitals and other components of the healthcare system is needed for locally based disaster response to work. Such groups are often reluctant to share information, such as bed availability, for fear of providing competitors with key information. We hear over and over in disasters about the importance of information exchange and cooperation. We have begun the process of addressing the need for Surge Capacity and Capability through various initiatives such as grants from the Health Resources and Services Administration. This support is essential if we are to be successful. It is also primarily a local and regional responsibility to develop and operate these "surge" programs.

WMD versus Natural Disasters

September 11 provided us as a nation with the impetus to begin to address many disaster medical issues. We have committed large amounts of funds to train and equip local communities and "First Responders" and more recently the hospitals as "First Receivers". A condition of receiving these funds the adoption of Incident Command, which places all responders at the same table and we have supported the acquisition of interoperable communications. The emphasis has been on equipping Fire and other responders to deal with WMD events and we have purchased large quantities of decon supplies and stockpiled necessary medications to treat exposures to WMD agents. As an aside, portions of the Strategic National Stockpile were activated for Hurricane Katrina and were a valuable asset in supporting both Federal and State Response assets in the impact area. The SNS lacks many of the day to day medications and supplies needed by healthcare facilities and this needs to be rectified.

While we have heavily funded decon and rescue I do wonder whether we have “saturated the market” regarding the “”decon” portions of our response. Once we have decontaminated or rescued victims, we still need to move them to medical facilities, yet last year only 4% of the Homeland Security funds went to ready EMS agencies (per the Advocates for EMS group sponsored by NAEMSP and NASEMSD). We need to be certain we have the assets in place to move the patients. Additionally, as mentioned above, we need to put in place the ability to provide definitive medical care for the victims of an attack. After victims have been decontaminated following a nuclear attack, where do they go?

As previously stated, the ability of most medical systems to surge is limited by the existing economic pressures of medicine. Options for definitive care are thus to bring in more “beds”, such as field hospitals (equipped with negative pressure capability for pandemics or biologics), establish alternate care and outpatient facilities for those whose conditions allow and arrange for evacuation of those victims who can travel. These are not mutually exclusive, but rather are part of a coordinated abpproach. The evacuation of victims with medical issues from Katrina was the first time we have really tested this portion of the system. It was challenging, but it did id give us the opportunity to see the strengths and weaknesses of the concept which will help guide improvements in the system.

Hospitals and other medical facilities need support to be able to expand capacity on short notice. Retrofitting facilities to increase the available number of negative pressure rooms, which decreases the risk of spread of biologic agents is an expensive proposition and one which the medical facility is not able to recoup from patient charges. Hospitals will also need increased staff to care for these additional patients as well as staff to man “alternate care facilities” in the community. Medical personnel from outside the impact area will be needed and plans for credentialing and moving these personnel must be in place and coordinated between the various Federal, State and Local agencies. Recent events to which we have responded show that there is a need for better coordination of many types of response assets.

We need to take an “All Hazards”, approach to disasters and as we identify needs, fund the necessary programs to correct those needs. For example funding needs to be directed to “hardening” the local responses. This works for both natural and WMD events, as Federal and other outside help still require time to arrive after a major disaster. In fact, it can take several days for certain types of assets to be setup and running. This is not because of ineptitude, but simply that it takes time to move assets, identify needs and get the personnel and equipment in place, often in an environment were movement is restricted due to damaged or blocked roads and limited helicopter and other resources. Lastly under current rules, Federal assets, for the most part, can only be committed upon request of the local or state authorities. Maybe it is time to review how we commit these assets.

It is crucial that local medical assets to have the capability to begin caring for the immediate victims and to have the necessary supplies in storage to support operations for the first several days. This includes medical supplies, equipment to expand the number of available beds, establish alternate care facilities and maintain existing medical care. This concept has long been advocated by Dr. Carl Schultz, at U Cal Irvine, as part of the local planning for the "big "earthquake, based upon the experiences with earthquakes along the San Andreas.

We must also remember that a response to a Catastrophic event is a long term response. For natural disasters, many of the injuries happen during or in the immediate post event period. Long term medical needs are the result of the regularly occurring problems in the community, often exacerbated by lack of access to care. In a Biological or Nuclear event, the medical demands arising from the event can actually grow with time, given the time course of radiation illness or the continuing spread of the biologic agent. Thus Catastrophic medical response must also be scaleable and flexible in design.

In addition, we must also look to the psychological aspects of a nuclear or biological attack. Natural disasters produce many such issues, primarily in the immediate victims and responders. A terrorist attack can impact not only those in the immediate area but also at great distances. All across our nation, people were affected by the events of 9/11. Another such event will have the same or perhaps greater effects. Response capability for this issue exists within present day response systems, but the needs after such an attack must be estimated and the assets developed to meet that need.

Federal Medical Disaster Response

Let us now turn to the Federal Medical Response to disasters. While many agencies play roles in this and Health and Human Services is the Lead Agency for ESF-8 under the NRP, the National Disaster Medical System has been and remains the Federal Government's primary rapid civilian medical response to disasters. Begun in the mid-80 the mission of the agency is (taken from the web site) .."to design, develop, and maintain a national capability to deliver quality medical care to the victims of - and responders to - a domestic disaster. NDMS provides state of the art medical care under any conditions at a disaster site, in transit from the impacted area, and into participating definitive care facilities."

The teams are composed of medical and support personnel who on notice as short as 6 hours, leave their primary jobs or close their medical practices and respond to provide medical care in disasters. We at the NDMS are the "tip of the spear" for Federal Medical Response. There are approximately 9000 of these responders all over the US (A list of teams and assets is Attachment 3) and while there are many issues and problems with how the system works, it is important to note that it does work. 19 NDMS DMAT's and other NDMS teams were pre-staged for Katrina, and as the storm passed, they along with the USAR Task Forces, began moving, into the impact areas. By the day after the storm, teams were providing medical care and continue to do so today. The mission is still ongoing, with personnel staffing hospitals and clinics destroyed or rendered

inoperable by the storms as we speak. (Attachment 2 lists patient services by NDMS personnel as of As of 10/13/05).

Like many issues in response, much of the NDMS problems are related to funding and support. Full time NDMS staff numbers about 50. They are stretched thin on a daily basis and during a disaster deployment; I am amazed they do not snap. Much of the problems in the field, for us as teams, stems from agency's lack of an intrinsic medical logistics support system. FEMA logistics has shown on the last 3 deployments a great inability to deliver medical supplies in a timely manner.

The emphasis and design of the team equipment and operations is heavily geared towards acute care, yet many of the missions, including those ongoing, have a strong primary care component. Often what is needed after the acute phase (often handled by local and state response) is to back fill and replace local medical assets destroyed by the disaster. Many of the physicians involved in this program, including myself, feel that a stronger medical presence in the operation of the agency will help correct some of these issues and balance the current emphasis on "rescue" type activities with the provision of "medical care".

I believe the public and much of Congress thinks of dramatic rescues and surgery taking place in "MASH" like tents, when they think of Disaster Medicine. That is but one component of the entire picture. This early phase acute care is an important one and I must again stress the importance of having local communities and regional assets trained and equipped to deal with this in the first few days post event as well as the importance of having rapidly deployable medical elements to get onsite and begin care. This must be followed by a rapid response of outside help to relieve the locals and expand the capabilities. The other portion of the Disaster Medicine equation is the replacement of the community's medical infrastructure to handle the "day to day" needs that are no longer met. People still have heart attacks and babies still get born. Not perhaps as exciting as the other aspect, but just as important.

CATASTROPHIC EVENTS

These are events that rapidly overwhelm the system and in terms of medical issues produce casualties that exceed the ability of local and state resources to provide care. When local and state assets cannot handle the demands, the role of the Federal Government's response is to provide them the support and personnel to manage the problem. The mechanism by which this happens either after the event or in anticipation of certain high risk types of events is outlined in the NRP and I will not review these in detail. There is also a Catastrophic Incident Annex to the Plan, which further defines assets and Federal Capabilities involved in the response.

To deal with the medical needs, as was said earlier, one needs to have facilities, personnel and equipment, all of which can be adversely impacted by the event. In addition, once stabilized, patients will likely need to be moved from the impact are to definitive care at medical facilities elsewhere. This mission: of bringing in medical

facilities and personnel and distributing injured to medical facilities around the country is the mission which the NDMS was created in the 1980's. Besides developing medical response teams, the NDMS recruited hospitals around the nation, who would make beds available to care for victims of disasters or soldiers returning stateside for further care.

As was said above, "excess" bed capacity in the US is low. For most of our disasters, the number of victims was relatively low and the transfer of patients to open more bed space or provide definitive care has not been needed. It was however needed during Katrina. The movement of patients requires the support of NDMS partners including DOD and VA and does require time to ramp up. Katrina showed that it can and does work and this program requires continued support.

During a true catastrophic event the number of patients to be moved can easily number in the thousands, since one way to increase surge capacity in a community is to move existing patients out of the area for continued care. But moving or evacuating patients may be much more difficulty than it first appears. Such evacuations are resource intensive and the air frames available for such activities are limited and may be committed to military operations. Similar limitations on availability of ambulances may result from the response demands to the disaster. Funding for additional transport assets must be included in catastrophic medic planning.

The other arm of post catastrophic event care is to bring in additional, portable medical facilities. I have been serving as one of many subject matter experts on a working group that is developing this type of facility, the "Federal Medical Contingency Station-Type I". This project has been designed by Dr. Lew Stringer and Capt Gary Sermones, USPHS (ret), at NDMS. As proposed, the:

"FMCS (I) provides hospital care capability during an emergency response by augmenting the local or community health care system with additional or replacement hospital facilities. In addition to declared national emergencies, FMCS (I) can support a continuum of state public health missions. One such mission would be to replace a local hospital if it becomes non functional due to contamination or destruction. Based on this scenario the hospital unit can be deployed to support the community hospital needs by providing up to 250 patient ED visits/24 hours, 12 ICU and 252 medical/surgical inpatients as well as up to 25 operative procedures/24 hours. The units will be fully staffed with NDMS healthcare professionals."

The prototype and project development for this unit was funded in FY 2005. The funding of $10 M to receive, equip the facility and carry out training, evaluation and design revision, as well as maintain the units was removed from the FY 2006 budget by the Senate. While I have a bias as to the importance of the project, since I volunteer my time to help with it, I believe that it is important for this to go forward. It allows us to rapidly bring into the affected those 3 key things I mentioned as essential to disaster medical care: Facilities, Personnel and Supplies.

Personnel issues must also be addressed. We have about 9000 personnel in the NDMS and in the ongoing response to Katrina; this resource was taxed to the maximum. Our day to day employers have been supportive and USERRA status for the NDMS has helped greatly, but it does become hard on the personnel's primary agency or hospital or private practice to be without them for long periods. During major disasters large numbers of medical professionals of all levels step forward to help, as we saw in the recent Hurricanes. It will be the same with any other catastrophic event. We will need these personnel and must find a way to effectively tap this resource should we have a true catastrophic, Biologic or Nuclear event.

Licensure and liability concerns have always been an issue with these volunteers and these hurricanes were no exception. There was much complaining about the "red tape". Emergency System for Advance Registration of Volunteer Health Care Personnel (ESAR-VHP) will help reduce some of this. However, ESAR-VHP only credentials personnel… *it does not train them*. Just because someone has a license or credential as a medical provider does not mean they are able to function in an environment they have never been in and which is very different from their day to day practice. I believe that ESAR-VHP needs additional funding to provide some basic disaster medical response training to those participants, especially to deal with infectious and communicable disease issues seen with biological agents. We will need the manpower.

This same type of training needs to be made available to Medical Reserve Corp volunteers as well. An excellent opportunity to provide this type of training in a realistic setting is to use these Medical Volunteers to assist with patient care in the continuing portions of a response to natural disasters such as NDMS has ongoing now in Jefferson and St. Bernard's Parishes in Louisiana. In a pandemic event, the demands for primary care, health screenings and similar services will rise dramatically. The ability to feed in additional medical personnel is important to maintain quality of care. The process must be worked out in advance.

This brings up the topic of coordination of medical response efforts at the Federal level, as MRC and ESAR-VHP are under the umbrella of HHS. Many agencies are involved in preparing for and responding to disasters and their medical consequences. FEMA and the NDMS have such programs, as does HHS and Public Health, to name a few. In order to reduce wastage and duplication of effort, as well as improve coordination before the event and in the field, I believe that all of these should reside under a "single roof". To be honest, I do not know whose roof that should be but I do feel that the purpose of this agency is to coordinate and provide the Federal Medical Response to disasters. I also believe that as we are talking about the provision of medical care, there must be active medical oversight and input as a key component of the process.

Furthermore, the agency that oversees these programs must have some flexibility to deal with response and other issues. Many of us in the medical community find the inflexibility and slavish devotion to rules and regulations we encounter with FEMA to be counterproductive to disaster response. Personnel tasked with specific responsibilities should not have to worry whether their decisions made during events will be second

guessed afterwards, in the comfort and safety of headquarters by accounting and legal personnel. In addition, the response must have a dedicated medical logistical group, solely tasked with supporting the medical assets, both in the field and during the planning and preparation phase. Under current FEMA and NDMS operations, support of team medical needs has been less than stellar.

Lastly I must ask this body and the American public to be realistic in their expectations of what will happen after a major disaster. Federal medical assets will be coming. We are not going to be there as soon as the smoke clears. Personnel must be mobilized and they and equipment moved. Assessments of needs must be done to determine what is needed and where and then those assets sent in and setup. That is not going to happen in just a few hours, but realistically may take several days.

To summarize my remarks, recent natural disasters, which are as close to a catastrophic event as our system has faced, severely taxed our capabilities. Our existing disaster medical response assets at Federal, State and Local levels did meet the challenge. We have learned much from these events and can apply those lessons to dealing with the medical aspects of a future Biological or Nuclear related attacks or a catastrophic natural disaster.

Our catastrophic medical response plan must include:

1. Equipping, training and hardening local medical infrastructure and rescue assets so that they remain functional after the event, with adequate supplies to operate in the immediate post event period.
    a. Provide the funding and support to enable surge capacity at the local level to deal with the influx of victims following such catastrophic events.
    b. Provide adequate decontamination capability
    c. Provide adequate medical supplies and pharmaceuticals in storage to support the initial “local” phase.
2. The Federal Catastrophic Medical Response must be scaleable, flexible and rapidly deployable, with trained personnel. This response must have its own dedicated supply chain that can support the operation consistently.
    a. The Federal response must be coordinated such that multiple agencies are not duplicating the efforts in advance and during the event and the there is consistency in how the program and response is run.
    b. While a number of options exist to accomplish this, the NDMS is currently the best positioned of the Federal medical response agencies to carry out this mission and needs to be supported.
    c. The Federal Response to an event must be “long term” as Biological and Nuclear events have long term medical consequences
3. During a Catastrophic Event such as a terrorist attack with an IND or, if we have advance warning, such as in a Category 5 Hurricane, the Federal Government must have the authority to mobilize and engage assets, without waiting for the request from the local officials.

a. Eliminate the requirement, during Catastrophic Events, which under the Stafford Act, has the states paying for up to 25% of the response cost for Federal Assets. The question of how the state can come up with the funds may serve as an impediment to asking for Federal help.
b. Federal Response assets of all types need the authority to engage and carry out their respective missions during a Catastrophic Event, without waiting for local or state requests. This will shorten Federal Response times and bring more assets to bear on the event. This is a major change from the current National Response Plan and Stafford Act.

4. Federal Disaster Medical Response for all types of events needs to be under a single agency umbrella, to eliminate duplication of effort and improve communication
5. Lastly, our response programs MUST be sustained. We have bought large amounts of equipment and supplies and distributed them or stockpiled them. These items require maintenance and even periodic replacement. Personnel must be trained and retrained. Otherwise they and the equipment lose their effectiveness. The Civil Defense Packaged Disaster Hospitals of the 1950'-60's all rotted in storage, for lack of support money. Congress must continue to support these efforts, not only today, but in the future.

   It is not if we will have a catastrophic event, but when. I again thank you for the opportunity to speak and I assure you and the American people that when such an event happens, and we pray it does not, the Medical and Response communities will be there and will do our best for our fellow Citizens. Thank you

Attachment 1: Summary of Federal Medical Contingency Station

Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) is developing two Prototype Field hospitals which will be called Federal Medical Contingency Stations (FMCS) type I in 2005. One will have its own sheltering and support system and the second will require a building to be placed in. Both will have a one hundred forty (140) bed capacity, Emergency room, Lab, X-ray, Pharmacy, Central Supply/Processing, Operating rooms, Post Operative Unit, Labor and delivery and intensive care units. The two Split field hospitals could be combined as a single fixed or mobile 270 bed facility.

These two facilities will be staffed by the National Disaster Medical System (NDMS), now under DHS/FEMA. These Medical response teams will begin training and exercising with the FMCS Type I units in 2006 after the units are packaged... The exact locations that the two medical units will be stored and maintained have not been determined at this time. Funding to maintain, train and evaluate the units is in the requested FEMA 06 budget under Medical Surge Capacity.

DHS and HHS have been collaborating closely for many months on the design and operational issues for the Type I units.

For further information contact: Lew Stringer, MD. Senior Medical Advisor, Department of Homeland Defense, FEMA Response Division. 202-646-2569 or Lew.Stringer@dhs.gov.

Attachment 2: Listing Patient contacts since start of operations and current personnel deployed by NDMS, based upon FEMA Region

HURRICANE KATRINA
NDMS RESOURCE STATUS REPORT
Updated: 10/14/05 – 0700

REGION IV: Through Reported Operational Period: 10/13/05: 0700-1900

- Total Patients Treated = 16,477
- Total Number of Personnel in the Field = 75

REGION VI: Through Reported Operational Period: 10/13/05: 0700-1900

- Total Patients Treated = 40,995
- Total Individuals Immunized = 59,917

Total Number of Personnel in the Field = 383

HURRICANE RITA
NDMS RESOURCE STATUS REPORT
Updated: 10/14/05 – 0700

REGION VI: Through Reported Operational Period: 10/13/05: 0700-1900

- Total Patients Treated = 9,074

Total Number of Personnel in the Field = 49

Attachment 3:

National Disaster Medical System Response Teams

22 Disaster Medical Assistance Teams
(Fully Operational/Operational)
33 Disaster Medical Assistance Teams
(Augmentation/Developmental)
4 National Medical Response Teams / WMD
5 Burn Teams
2 Pediatric Teams
1 Crush Medicine Team
3 International Medical / Surgical Teams *
3 Mental Health Teams
3 Veterinary Medical Assistance Teams
11 Disaster Mortuary Operational Response Teams (1 WMD)
10 National Pharmacist Response Teams
10 National Nurse Response Teams
1 Joint Management Team

* Includes 1 under development